

**SELECTIVE RETENTION: A LONGITUDINAL ANALYSIS.**  
**IV. ATTRITION SIX MONTHS AFTER RECRUIT TRAINING**

Samuel B. Landau

Reviewed by  
Edwin G. Aiken

Released by  
James F. Kelly, Jr.  
Commanding Officer



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<p>This report is one of a series that describes a longitudinal study of a cohort of first-term enlisted personnel to determine how various variables are related to attrition. (The purpose of the effort described herein was to determine how various behavioral intentions, attitudes, demographic characteristics, expectations, and performance indices are related to attrition occurring 6 to 7 months after recruit training.) Enlisted master record information indicated that attrition between the end of recruit training and 6 to 7 months</p>		

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later was 5.3 percent. The variables most highly associated with attrition were lack of promotions, unauthorized absences, and the perceived honesty of the recruiter. These findings indicated that behaviorally disruptive individuals were generally discharged. Recommendations focused on maintaining closer attitudinal and motivational scrutiny of individuals during their first several months after recruit training.

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## FOREWORD

This research and development was conducted within project Z1178-PN, Attrition Analysis and Management, under subproject Z1178-PN.02, Retaining Qualified Enlisted Personnel (formerly Selective Retention: A Longitudinal Analysis) and the sponsorship of the Deputy Chief of Naval Operations (OP-01). The objective of this subproject is to identify factors related to attrition of first-term enlisted personnel that will aid in retaining those who can best benefit the Navy. Factors are being identified by analyzing responses to questionnaires administered to a cohort of enlisted personnel at various points during their first enlistment.

This is the fourth in a series of reports being prepared under this subproject. Previous reports in this series described factors that are predictive of attrition during recruit training, recruits' attitudinal changes between the beginning and end of recruit training, and the differences in attitudes of recruit training graduates, delayed graduates, and attrites (NPRDC TRs 79-5, 80-18, and 81-3). A special report, related to but not a part of the series, described the effects of unmet expectations, satisfaction, and commitment on reenlistment intentions (NPRDC SR 81-25). The purpose of the effort described herein was to determine how various behavioral intentions, attitudes, demographic characteristics, expectations, and performance indices are related to attrition occurring 6 to 7 months after recruit training.

JAMES F. KELLY, JR.  
Commanding Officer

JAMES J. REGAN  
Technical Director



## SUMMARY

### Problem and Background

Turnover rates of first-term enlisted personnel, due to either attrition occurring during their 4-year enlistment or their failure to reenlist at the end of that enlistment, have been a concern of military planners. This loss of personnel has resulted in increased costs associated with recruitment, selection, placement, and training. To address this problem, the Navy Personnel Research and Development Center is conducting a longitudinal study of a cohort of first-term enlisted personnel. In this study, subjects are being administered questionnaires at various points during their enlistment and responses analyzed to identify factors related to attrition and reenlistment. Previous reports issued concerning this study addressed (1) factors that were related to attrition during recruit training, (2) changes in recruit attitudes and perceptions that occurred between the beginning and end of recruit training, (3) differences in attitudes of recruit training graduates, delayed graduates, and attrites, and (4) the effects of unmet expectations, satisfaction, and commitment on the intention to reenlist.

### Purpose

The objective of this research was to determine how various behavioral intentions, attitudes, demographic characteristics, expectations, and performance indices are related to attrition occurring 6 to 7 months after recruit training.

### Approach

The sample consisted of 3672 recruit training graduates. Attrition rates and performance indices (unauthorized absences, desertions, and promotions) were obtained for these individuals from the enlisted master record (EMR) tape 6 to 7 months after they graduated from recruit training.

Questionnaire and EMR data were compared for eventual "stayers" and "leavers." Additionally, a stepwise multiple regression analysis was performed to determine those variables that best combined to predict attrition. The administrative reasons given for discharge were also assessed.

### Results

1. The attrition rate 6 to 7 months after recruit training was 5.3 percent (195/3672).
2. Leavers had fewer promotions per person, many unauthorized absences (UAs), and perceived that recruiters were not truthful with them. These factors were the best predictors of attrition.
3. Statistically significant differences were found in the behavioral intentions, general satisfaction, Navy commitment, and general attitudes of stayers and leavers.
4. The major administrative reasons for discharge were behavior disorders (apathy, defective attitudes, and substandard performance) and personality disorders (inaptitude).

## Conclusions

Since the people who were not promoted, who had UAs, and who did not perceive their recruiters as having been truthful were the most likely to attrite, it appears that poorer quality individuals (in a disciplinary sense) were the ones who were discharged. Although the administrative reasons for discharge pertained primarily to attitudinal and motivational factors, attitudinal and motivational precursors to attrition were not obtained from the questionnaire administered at the end of recruit training. The Navy outlook at that time was generally positive. Consequently, events or situations may have developed during the period of time after recruit training that negatively influenced attitudes toward the Navy, motivations, and behaviors.

## Recommendations

Attitudinal, perceptual, and experiential measurements should be made at regular intervals (e.g., every 2 months) during the 6 to 7 month period after recruit training. This would provide more data for intensive analysis and evaluation of the factors contributing to behavioral problems. In addition, information should be gathered on the exact reasons why individuals are discharged.

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## INTRODUCTION

### Problem

Turnover rates of enlisted personnel, due to either losses before the expiration of one's active obligated service (EAOS) or failure to reenlist at the end of that enlistment, have been of concern to the military (Sinaiko, 1977; Goodstadt & Glickman, 1975). In order to eliminate or reduce the problems associated with people attriting (losses prior to EAOS) or not reenlisting, a greater understanding of the causes of attrition is needed.

A directly related issue concerns the quality of the personnel who do or do not remain. Research has been negligent in assessing the performance of Stayers and Leavers.

### Background

To address these problems, the Navy Personnel Research and Development Center (NAVPERSRANDCEN) is conducting a longitudinal study of a cohort of first-term enlisted personnel. Since such personnel attrite throughout their enlistment cycle, from the beginning of recruit training to the expiration of active obligated service (EAOS), it was decided to administer questionnaires to subjects at various points during the cycle. Responses to these questionnaires will be useful in providing information that will aid in identifying and retaining those who can best benefit the Navy and in determining how attitudinal changes--occurring from one assessment point to the next--affect attrition and reenlistment.

This is the fourth in a series of reports report issued on the longitudinal study. The first report (Landau & Farkas, 1978) provided information obtained from a questionnaire (Q1) administered to 4911 recruits at the three Recruit Training Centers (RTCs) during their fourth day of recruit training. Q1, comprised of 144 items, was designed to examine the relationship between individual (personal) and organizational (work environment) factors and to determine how these factors relate to attrition and reenlistment. Individual factors were covered by items assessing (1) demographics, (2) motivations for joining the Navy, (3) behavioral intentions (e.g., to complete enlistment), (4) expectations (e.g., of boot camp), (5) general attitudes (e.g., toward the Navy), and (6) personality attributes (e.g., extent to which one perceives that environmental situations are controlled by oneself or by external events). Organizational factors were covered by items assessing (1) rated desirability of work outcomes, and (2) expectancies of realizing those outcomes in the Navy. A copy of Q1 was provided as an appendix to Landau and Farkas.

The second report (Landau, Farkas, & Wagner, 1980) provided information obtained from a questionnaire (Q2) administered to 3672 recruits during the last week of recruit training. Although 4483 members of the original sample remained on active duty at that time, 811 of them either were not present (e.g., because of illness, duty) on the day the Q2 was administered or had been "set back" for academic, behavioral, or medical reasons. (About 18 percent of recruits entering the RTCs are required to repeat portions of training or make up those that they missed.) Q2 comprised 144 items, 79 (55%) of which were similar or identical to those included in Q1. It included items assessing demographics, general attitudes, boot camp experiences, met expectations (in boot camp), personal considerations (desired outcomes that conceivably could have been attained in recruit training), commitment to the Navy, and future expectations (of the Navy). A copy of Q2 was provided as an appendix to Landau et al.

The third report (Farkas, 1980) compared the attitudinal responses, obtained through responses to Q1 and Q2, of recruits who were discharged during recruit training (attrites); who graduated from recruit training after a delay for academic, behavioral, or medical reasons; and who graduated from recruit training without delay (graduates). In this study, data were obtained for 4011 recruits: 419 attrites, 265 delayed graduates, and 3327 graduates. A special report, related to but not part of the series (Farkas, 1981), described the effects of unmet expectations, satisfaction, and commitment on reenlistment intentions.

#### Purpose

The purpose of the present effort was to determine how various behavioral intentions, attitudes, demographic characteristics, expectations, and performance indices are related to attrition occurring 6 to 7 months after recruit training.

### **METHOD**

#### Sample

The sample consisted of 3672 first-term enlisted recruit training graduates who had entered the Navy during June and July 1977 and completed recruit training during July and August 1977. Attrition information taken from the enlisted master record (EMR) showed that, as of February 1978 (about 6 to 7 months after completion of recruit training), 195 (5.3%) individuals had attrited and 3477 (94.7%) were still on active duty.

#### Measures

Data on sample members' behavioral intentions, satisfaction, Navy commitment, demographics, met and future expectations, and general attitudes were obtained through their responses to Q2. Data on their AFQT scores, race, and performance indices (i.e., the number of promotions, unauthorized absences (UAs), and desertions that occurred during the 6- to 7-month period after recruit training) were obtained from the EMR.

#### Analyses

1. Responses of eventual "stayers" and "leavers" to the behavioral intention, satisfaction, general attitude, and Navy commitment items were compared using one-way analysis of variance procedures.
2. Responses of the two groups to met and future expectation items were factor analyzed, using principal components varimax rotation.
3. A step-wise multiple regression analysis was performed to determine which combination of variables best predicted attrition.

## RESULTS

### Demographics

The stayers and leavers differed slightly as to the highest educational level attained and age. Stayers had slightly more years of education and were older than leavers (11.58 vs. 11.25 years; 19.75 vs. 19.07 years). No significant differences were found for AFQT scores, marital status, sex, and race.

### Behavioral Intentions, Satisfaction, General Attitudes, and Navy Commitment

Table 1, which compares the stayers and leavers as to behavioral intentions, satisfaction, general attitudes, and commitment, shows that they differed significantly on all of these variables.

1. Behavioral Intentions. Stayers were more likely to complete their enlistments and to make the Navy a career. Leavers were more definite about not reenlisting and leaving if given the opportunity.

2. Satisfaction. Stayers were more generally satisfied with the Navy than were Leavers.

3. General Attitudes. Stayers were more likely to have been assigned to their preferred training than were leavers. Leavers reported more regret about joining the Navy, thought more about leaving, and expected better civilian job opportunities than did stayers. Stayers also perceived that recruiters were more truthful than did leavers.

4. Navy Commitment. Stayers had greater Navy commitment than did leavers.

It should be noted that the mean responses of the stayers and leavers were in the same general direction for many of these variables. For example, the means for the intention to complete enlistment were relatively high for both groups (4.50 and 4.23, respectively), although the differences between them are statistically significant.

### Met Expectations (Experienced Outcomes) and Future Expectations

Table 2 provides results of the factor analyses performed on the Q2 met and future expectations items. As shown, three basic factors (eigenvalues greater than 1.0) resulted from the met expectations analysis (Supervision, Peer Relations, and Individual Needs); and two (Supervisory Support and Personal Concerns) from the future expectations analysis. All of these factors are discussed more completely in Landau et al. (1980). Composites were developed for each factor based on the average responses to the items within each factor. No significant differences were found between stayers and leavers on any of the derived composites.

### Multivariate Predictors of Post Recruit Training Attrition

To determine the combination of variables that best predicted attrition 6 to 7 months after recruit training, the sample was divided into two groups for which all data were complete: a validation group ( $N = 1225$ ) and a cross-validation group ( $N = 1199$ ). A stepwise multiple regression analysis was performed on the validation sample for the demographic, attitudinal, and personnel performance variables. The results, as shown in Table 3, revealed that the number of promotions and UAs were most useful in explaining short-term attrition after recruit training. Only three variables combined to significantly

Table 1

## Behavioral Intentions, Satisfaction, General Attitudes, and Navy Commitment of Stayers and Leavers

Variable	Group <sup>a</sup>	Mean <sup>b</sup>	SD	F	df
<b>Behavioral Intentions</b>					
To complete my enlistment	Stayers	4.50	.67	21.20**	1/3577
	Leavers	4.23	.85		
Not to reenlist	Stayers	2.94	.84	16.49**	1/3577
	Leavers	3.24	.96		
To leave if I had the opportunity	Stayers	2.08	.94	22.11**	1/3573
	Leavers	2.47	1.09		
To make the Navy my career	Stayers	2.98	.90	10.30**	1/3572
	Leavers	2.73	1.00		
<b>Satisfaction</b>					
Generally satisfied	Stayers	3.78	.79	17.37**	1.3577
	Leavers	3.49	.91		
<b>General Attitudes</b>					
Sorry I joined the Navy	Stayers	1.88	.86	25.31**	1/3576
	Leavers	2.26	1.07		
Think a lot about leaving	Stayers	2.00	.95	16.95**	1/3573
	Leavers	2.34	1.07		
Was assigned to my preferred training	Stayers	3.64	1.31	10.12**	1/3570
	Leavers	3.28	1.40		
Expect better civilian job opportunities	Stayers	2.22	.98	8.75*	1/3574
	Leavers	2.47	1.08		
My recruiter was generally truthful	Stayers	3.26	1.14	15.77**	1/3577
	Leavers	2.87	1.21		
<b>Navy Commitment<sup>c</sup></b>					
	Stayers	3.69	.53	18.16**	1/3362
	Leavers	3.48	.67		

<sup>a</sup>For stayers, Ns ranged between 3235 and 3442; for leavers, Ns ranged between 129 and 137.

<sup>b</sup>Means are based on a 5-point scale (1 = Strongly Disagree, 5 = Strongly Agree).

<sup>c</sup>Commitment items were responded to on a 5-point scale; the higher the score, the greater the commitment to the Navy.

\*p < .01.

\*\*p < .001.

Table 2  
Results of Factor Analysis of Q2 Items on Met  
and Future Expectations

Factor	Item Components	
	Met Expectations	
I. <u>Supervision</u>	Company commander who thinks of me as a person. Treated with respect by company commanders Helpful company commanders Company commanders willing to listen to my problems Being treated in a fair manner Company commanders who set good examples for others to follow Good leadership/supervision Getting credit when I do my duties well Able to question company commanders about what they want me to do	(69) (62) (64) (76) (70) (80) (77) (74) (90)
II. <u>Peer Relations</u>	Helpful fellow recruits Friendly feelings between fellow recruits Able to talk and work well with others Working as part of a team Helping others get through boot camp Meeting and making new friends Being part of a well-disciplined organization	(79) (75) (71) (65) (68) (85) (67)
III. <u>Individual Needs</u>	Opportunity to have privacy Chance to use my free time for things I like to do Able to set my own pace in getting my work done Chances to fully use my abilities	(82) (83) (87) (86)
Future Expectations		
I. <u>Supervisory Support</u>	Supervisors/leaders who think of me as a person Being treated in a fair manner Supervisors/leaders willing to listen to my problems Good leadership/supervision Helpful supervisors/leaders Friendly feelings between co-workers Getting credit when I do my work duties well Treated with respect by leaders/supervisors Working as part of a team	(125) (127) (132) (133) (121) (131) (130) (120) (122)
II. <u>Personal Concerns</u>	Learning skills that will be useful later in my life Chances to fully use my abilities Taking pride in my work Improving the quality of my life Studying to learn my job Regular promotions and advancements Gaining responsibility Doing the type of work I want Chance to use my free time for things I like to do	(134) (137) (124) (129) (144) (136) (126) (128) (135)

Note. Numbers in parentheses refer to Q2 item number.

Table 3

Stepwise Multiple Regression Analysis to Determine Variables  
that Best Predict Attrition  
(N = 1225)

Variable	R	R <sup>2</sup>	r
Total promotions	.43	.182	-.43
Total unauthorized absences	.44	.190	.25
Recruiter was generally truthful	.44	.196	-.10

Note. Cross-validated multiple R = .43 (N = 1199).

relate to attrition, resulting in a multiple R of .44 and accounting for 20 percent of the variance. The cross-validated multiple R for these predictors was .43. The complete table of the intercorrelations between all the variables assessed in relation to attrition is provided in Appendix A.

#### Reasons for Discharge

EMR data showed that the major administrative reasons for discharge were (1) behavior disorders (apathy, defective attitudes, and substandard performance) (36.4%) and (2) personality disorders (primarily inaptitude) (26.2%). Other discharges were due to medical disabilities (14.8%), convenience to the government (14.8%), and a group of miscellaneous categories (7.8%).

#### DISCUSSION AND CONCLUSIONS

The primary purpose of the current investigation was to determine how various behavioral intentions, attitudes, demographic variables, expectations, and performance indices are related to attrition occurring between the end of recruit training and 6 to 7 months later.

The performance measures--the total number of promotions and UAs--were found to be the best predictors of turnover. Not being promoted had the highest relationship with attrition. Generally, after 6 months in the Navy, persons are routinely promoted from E-1 to E-2 pay grades (to E-3 for some individuals). The present findings indicated that, if promotions did not occur, individuals were likely to be discharged. Further, a greater number of UAs was also more likely to be associated with attrition. The third variable adding to the predictability of attrition was the perceived truthfulness of the recruiter; the less truthful he was perceived, the higher the relationship with attrition.

An investigation into the administrative reasons given for the attrition of this group indicated that over half of those discharged were classified as exhibiting personality or behavior disorders. A large percentage of this group was further classified as being apathetic or having "defective" attitudes. Aside from the definitional problems associated with these categories, motivational or attitudinal considerations appear to play an important part in short-term attrition after recruit training. A case might thus be made that "poorer quality" individuals, at least in terms of disruptive behavior, were being discharged.

Although attitudinal differences were found at the end of recruit training between eventual stayers and leavers, these differences were not highly correlated with attrition. A closer investigation of these differences suggests that the general direction of the responses for stayers and leavers was similar and generally positive. Further, small attitudinal response differences may have been magnified by the large sample size difference between stayers and leavers (3477 vs. 195). Additionally, the variance of the responses was relatively small. When considering this finding, it should be remembered that all of these subjects had just gone through the same set of recruit training experiences and, therefore, they could be expected to have similar attitudes toward the Navy. Also, the leavers did not necessarily leave voluntarily; in fact, many members of this group might have "liked" the Navy and preferred to stay in but were discharged. Thus, the similarities between the groups at the time the questionnaire was administered probably led to the limited attitudinal differences observed and the limited predictability of the attitudinal and perceptual variables for attrition.

It appears that events or situations that occurred during the 6 to 7 months following the end of recruit training contributed to the resultant behavioral/motivational problems and led to discharge to a greater extent than did recruit training events. Such events as failing to receive the type of training desired (i.e., apprenticeship vs. Class "A" school), experiencing a negative initial exposure to the first duty station, or having unrealistic expectations about the first duty station may have contributed to the disruptive behaviors that led to being discharged. Unfortunately, no exit interviews or questionnaires could be obtained for those who left.

In an attempt to assess some of the attitudinal and motivational effects that occurred after recruit training, a questionnaire (Q3) was administered approximately 8 months after recruit training. The leavers described in the present report, however, had already left by this time. Preliminary results of the 8-month questionnaire responses indicate a general decline in favorable Navy attitudes for both Class "A" school and apprenticeship training personnel (Landau, McCabe, & Wagner, *in press*). The overall experiences after boot camp did not appear to fulfill the expectations held earlier and general dissatisfaction emerged. Therefore, it appears that the environmental experiences do have an effect on subsequent attitudes. Since approximately five percent of recruit training graduates had attrited prior to the administration of Q3, it appears that the attitudinal and perceptual events occurring within the 6- to 7-month period after recruit training should be monitored to obtain a better understanding of what leads to disruptive behaviors and turnover during this time frame.

## RECOMMENDATIONS

The results strongly indicated that attitudinal and demographic variables measured at the end of recruit training were not predictive of attrition 6 to 7 months later. Several performance indices, however, were highly associated with turnover. Environmental events or situations occurring during this time frame were presumed to affect performance and subsequent attrition. The current study was not able to identify the attitudinal, perceptual, and experiential variables that influenced disruptive behaviors, primarily because the attitudes and experiences were relatively positive when assessed at the end of boot camp. Consequently, it is recommended that, in any future investigations confined to the first 6 months after recruit training, attitudinal, perceptual, and experiential assessments should be made at regular intervals (e.g., every 2 months) for recruit training graduates. This will ensure that training and duty assignment attitudes and experiences will be obtained relatively close to the time when they occur.



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**APPENDIX**

**INTERCORRELATION MATRIX OF DETERMINANTS OF ATTRITION**



Intercorrelation Matrix of Determinants of Attrition

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Attrition																										
2. Intend to complete enlistment	-.08	-.08																								
3. Intend not to re-enlist	.05	-.16																								
4. Intend to leave if given the opportunity	.04	-.35	.35																							
5. Intend to make the Navy my career	-.03	.19	-.69	-.37																						
6. General satisfaction	-.06	.34	-.33	-.42	.33																					
7. Sorry I joined the Navy	.06	-.34	.42	.55	-.40	.54																				
8. Think a lot about leaving	.05	-.31	.37	.62	-.35	-.43	.56																			
9. Was assigned to preferred training	-.07	.13	-.02	-.04	.01	-.03	-.05	-.06																		
10. Expect better civilian job opportunities	-.00	-.24	.25	.33	-.29	-.28	.34	.32	-.01																	
11. Recruiter was generally truthful	-.10	.20	-.19	-.24	.18	-.38	-.31	-.23	.10	-.17																
12. Navy Commitment	-.07	.36	-.39	-.51	.44	-.47	-.51	-.46	-.23	-.41	.28															
13. Supervision	-.04	.17	-.20	-.23	.22	-.38	-.30	-.23	-.04	-.21	.27	.39														
14. Peer Relations	-.01	.26	-.18	-.28	.24	-.36	-.31	-.23	.00	-.23	.23	.47	.56													
15. Individual Needs	-.00	.01	-.13	-.12	.16	.23	-.16	-.24	-.12	-.10	.12	.20	.51	.28												
16. Supervisory Support	-.02	.26	-.28	-.28	.26	.36	-.35	-.31	.00	-.23	.26	.38	.51	.49	.29											
17. Personal Concerns	-.04	.31	-.27	-.37	.50	.39	-.38	-.36	.08	-.51	.25	.56	.40	.43	.20	.73										
18. Education	-.00	.02	-.00	-.04	.00	.01	-.03	-.04	.18	.03	.00	.03	.00	.02	-.06	.07										
19. AFQT	-.00	.11	.01	-.07	-.02	.07	-.06	.35	.01	.17	.06	-.12	-.06	-.29	-.04	.03	.18									
20. Age	-.06	-.02	-.03	-.03	-.01	-.01	-.00	-.01	.05	.03	.00	-.01	.04	.01	-.01	.04	.00	.28	.11							
21. Marital Status	-.00	-.00	-.03	-.02	.01	-.06	.04	.00	.03	.04	-.04	.02	-.00	-.01	-.04	.02	.01	.05	.07	.17						
22. Sex	-.01	.01	.00	-.08	.03	-.02	-.06	-.06	.10	-.05	.00	.05	-.05	.07	-.11	-.02	.05	.13	.07	.09	.02					
23. Race	-.02	-.03	-.02	-.04	-.03	.02	.05	-.10	-.02	-.06	.00	.09	.03	.13	.02	.01	.02	-.17	-.06	-.01	-.02					
24. Promotions	-.43	.07	-.04	-.09	.07	.09	-.10	-.06	.07	-.02	.04	.09	.05	.03	-.04	.01	.06	.02	-.01	.06	.02					
25. Unauthorized Absences	.25	-.05	.03	.10	-.02	-.05	.06	.06	-.09	.04	-.05	-.05	-.03	-.05	.04	-.04	-.10	-.08	-.10	-.04	-.05	-.40				
26. Desertions	.20	-.09	.01	.06	-.03	-.07	.06	.01	-.07	-.00	-.03	-.08	-.02	-.02	-.01	-.02	-.07	-.09	-.04	-.05	-.02	-.01	-.02	-.35	.28	



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